Local Work Instructions:

Chemical Inventory and Additives used Management SHELL LWI-002

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Scope:	Shell operations	Reviewed/Revised By:	Jeremy Chadwell
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SCOPE

This Local Work Instruction (LWI) provides a consistent methodology for tracking all chemicals onboard, as well as, chemicals that arrive onboard. It also outlines the proper procedure if and when such chemicals must be used. The goal is to ensure chemicals that are not permitted under a site specific permit do not end up in discharge streams. This LWI also outlines how concentrations of products and chemicals will be tracked and documented for applicable discharges (001 through 013).

DEFINITIONS

Biocide is a chemical substance or microorganism which can deter, render harmless, or exert a controlling effect on any harmful organism by chemical or biological means.

PTW or Permit to Work the written form is completed and approved by an authorized person when a certain task has the potential to harm the environment, personnel or equipment. The permit is filled out along with a JSA and other related documents.

MCI or Master Chemical Inventory is the complete list of the chemicals and quantities/volumes stored on the rig at any given time.

PPE or Personal Protective Equipment refers to protective clothing, helmets, goggles, or other garment or equipment designed to protect the wearer's body from injury.

RESPONSIBILITY

The M-I SWACO Compliance Supervisor is responsible to ensure that this LWI has been provided to each person prior to conducting this task.
Each M-I SWACO Compliance Specialist is responsible for reviewing the below procedure, and referenced documents prior to beginning the work outlined within and for adhering to the below document while performing the task.

1.0 References:

- 1.1 NPDES General Permit
- 1.2 Shell Waste Management Plan
- 1.3 Best Management Practices
- 1.4 Quality Assurance Program
- 1.5 Drilling Fluids Plan
- 1.6 Product MSDS sheet
- 1.7 Master Chemical Inventory
- 1.8 Control of Dangerous Goods (Noble Document)
- 1.9 Alaska Compliance Manual

2.0 General Requirements:

- 2.1 M-I SWACO Compliance trained personnel will oversee all monitoring and documentation.

3.0 Safety Guidelines:

3.1 Refer to chemical/product MSDS for PPE requirements and guidelines.
3.2 Dispose of contaminated PPE in properly labeled bins. Refer to on-site HSE rep or Shell's Waste Management Plan.
3.3 Thoroughly rinse all empty containers prior to disposal.
3.4 Follow rig policies and procedures prior to using any chemical not permitted into a discharge stream.
3.5 Comply with manufactures usage recommendations and do not exceed suggested max concentration level.
3.6 If product or chemical is regulated by the EPA, follow all guidelines and max concentration limits.

4.0 Instructions:

4.1 Instructions for Non-Permitted Discharge Chemical Usage

4.0.1 Operator's PTW must be completed and signed by the rig manager and drilling foremen.
4.0.2 Permit must be shown to Noble's Materials Coordinator to gain access to chemical storage locker.
4.0.3 Any discharge stream that has the potential for a non-permitted substance to enter must be locked out and tagged out following the rigs LO/TO policies and procedures.
4.0.4 After work is complete in the area or on the equipment, the M-I SWACO Compliance Specialist must be notified so testing can be completed to ensure no residue of the chemical is found.
4.0.5 Once deemed clear by the M-I Compliance Specialist, the equipment may return to service.
4.0.6 Close all permits and remove locks and tags following rig policies.

4.2 Tracking Products and Chemicals Used

4.2.1 M-I SWACO's drilling fluid software ONE-TRAX will be used to track inventory and usage of all products used in the drilling fluids (discharges 001 and 013). Concentration levels will also be tracked in ONE-TRAX and documented on the NPDES spreadsheet.
4.2.2 If products or chemical are used in any other discharge streams, volumes and concentration levels will be documented onto the NPDES spreadsheet.
4.2.3 Prior to performing cement operations, a recipe containing products and amounts will be given to the M-I SWACO Compliance Specialist. After review and deemed acceptable, data will be logged onto the NPDES spreadsheet.
4.2.4 All data collected on the NPDES spreadsheet will be submitted as needed and recorded on the End-of-Well file.

4.3 Shipping, Receiving and Storage of Products, Chemicals and Samples

4.3.1 Collected samples will be preserved, labeled, and stored following permit requirements.
4.3.2 Prior to shipping of samples, all MSDS, COC's, manifests and other required documents will be packed accordantly.
4.3.3 All products and chemicals stored onboard will be properly stowed and segregated following the OSHA segregation chart. Storage areas must have all required placards in place.
4.3.4 MSDS's for all products/chemicals will be readily available and stationed in required areas throughout the rig.
4.3.5 If non-permitted discharge chemicals or hazardous products/chemicals must be ordered, the rig manager and/or the drilling foremen must approve.
4.3.6 Upon receiving products or chemicals, the Materials Coordinator shall verify all required documents are included with shipment.
4.3.7 After shipment is received, all inventory lists must be up-dated and distributed to all parties involved. MSDS's must be added to binders if the product is new to the rig.

5.0 Discharges and Documentation of Chemical Usage

Discharge	Description	Company Responsible	Form or Information Documentation
D001	Muds and Cuttings	M-I SWACO	ONE-TRAX
D002	Deck Drainage	Noble	NPDES Log
D003	Sanitary Waste	Noble	Chief Engineer Log/NPDES Log/Ballast Report
D004	Domestic Waste	Noble	Chief Engineer Log/NPDES Log
D005	Desalination Unit	Noble	Chief Engineer Log/NPDES Log
D006	Blowout Preventer Fluid	Noble	Chief Engineer Log/NPDES Log
D007	Boiler Blowdown	Noble	Chief Engineer Log/NPDES Log
D008	Fire Control System Test Water	Noble	Chief Engineer Log/NPDES Log
D009	Non-contact Cooling Water	Noble	Chief Engineer Log/NPDES Log
D010	Uncontaminated Ballast Water	Noble	Chief Engineer Log/NPDES Log/Ballast Report
D011	Bilge Water	Noble	Chief Engineer Log/NPDES Log/Ballast Report
D012	Excess Cement Slurry	Halliburton	Halliburton Log/NPDES Log
D013	Muds, Cuttings, and Cement at the Seafloor	M-I SWACO	ONE- TRAX/NPDES Log

6.0 Calculations

6.1 Final product concentration: $\frac{[(IV-DV) \times IP + PA]}{TV}$

Initial Volume = IV, bbls
Discharged Volume = DV, bbls
Initial Product Concentration = IP, lb/bbls
Product Additions = PA, lb
Total Volume = TV, bbls

Revision Log

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